REMARKS

In the Final Office Action dated March 31, 2009, Claims 25-45 are pending. This Response addresses each of the Examiner's rejections and objections. Applicants therefore respectfully submit that the present application is in condition for allowance.

Favorable consideration of all pending claims is therefore respectfully requested.

Claims 38 and 45 stand objected to under 37 CFR 1.75(c) for allegedly being in improper dependent form for failing to further limit the subject matter of a previous claim.

Claims 25-35 stand rejected under 35 U.S.C. §112 second paragraph as allegedly being incomplete for omitting essential steps, such omission amounting to a gap between the steps.

Claim 30, 36 and 38 stand rejected under 35 U.S.C. §112 second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claims 25-39, 41 and 44-45 stand rejected under 35 U.S.C. 103 (a) as allegedly unpatentable over Hoier-Madsen et al., (Int. J. Tiss Reac. Xl (6), 327-332 (1989)) (hereinafter, "Hoier-Madsen") in view of U.S. Pat. 6,852,546 to Brown (hereinafter, "Brown") and Da Costa et al. (Biochim. Biophys. Acta, 1292, 23-30,(1996)) (hereinafter, "Da Costa").

Claims 40, 42 and 43 stand rejected under 35 U.S.C. 103 (a) as allegedly unpatentable over Hoier-Madsen in view of Brown and Da Costa and in further view of U.S. Pat. 6,406,867 to Yu et al. (hereinafter, "Yu").

Claim 25 has been amended to recite wherein a value of 10^{10} L/mole for an autoantibody's affinity for apoFR is a high affinity and a value of a value of 10^{6} L/mole for an autoantibody's affinity for apoFR is a low affinity. Support for this amendment can be found throughout the application, page 29 lines 10-23 specifically. Claims 36 and 44 have been

amended to recite detecting the affinity of autoantibodies to a folate receptor. Support for this amendment can be found throughout the application, page 30 line 11 to page 31 line 2.

Claim 45 is canceled. Claim 44 is amended to recite the subject matter of previously filed Claim 45. Claim 35 is canceled. Claim 25 is amended to recite the subject matter found in previously submitted Claim 35. Claim 37 is canceled. Claim 36 is amended to recite the subject matter found in previously submitted Claim 37.

Claim 30 is amended to recite the affinity matrix. Claims 31 and 32 have been amended to recite the subject. Claim 36 has been amended to recite a subject's biological sample. Support for this amendment can be found throughout the application, specifically at page 19 line 26 to page 20 line 11.

No new matter is added by way of these amendments.

In view of the following remarks, Applicants request further examination and reconsideration of the present patent application.

Claim Objections

Claims 38 and 45 stand objected to under 37 CFR 1.75(c) for allegedly being in improper dependent form for failing to further limit the subject matter of a previous claim. Claim 38 recites that the subject's biological sample in the kit is serum as compared to another biological sample, and that purified human FR is attached to an insoluble support as compared to another support. These structural limitations clearly limit the scope of independent Claim 36 and are not intended uses. Claim 45 is canceled.

Thus the objection to Claims 38 and 45 is overcome. Withdrawal of the objection and issuance of Claim 38 is earnestly solicited.

Rejections under 35 U.S.C. §112

Claims 25-35 stand rejected under 35 U.S.C. §112, second paragraph as allegedly being incomplete for omitting essential steps, such omission amounting to a gap between the steps.

Claim 35 has been canceled. Claim 25 is amended to recite the subject matter found in previously submitted Claim 35.

The removal and acidifying steps recited in newly amended Claim 25 are fully described in the specification specifically at page 18 line 4 to page 19 line 15. A person of ordinary skill in the art would understand based on the application, how to conduct each step recited in Claim 25.

Claims 30-32, 36 and 38 stand rejected under 35 U.S.C. §112 second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 30 has been amended to recite the affinity matrix. Claims 31 and 32 have been amended to recite the subject's serum.

The recitation of "detectable" and "known" in Claim 36 are terms understood by those of ordinary skill in the art, and do not require further clarification to provide an understanding. Further support for these terms can be found throughout the application, specifically at page 27 line 23 to page 28 line 20. Further, because each element in the kit is recited separately, each element recited is separate from the others in the kit.

Claim 36 has been amended to include a subject's biological sample. The recitation of "the subject's biological sample" in Claim 38 has proper antecedent basis.

Accordingly, the rejection of Claims 25-35 under 35 U.S.C. § 112, second paragraph are overcome and withdrawal thereof is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 25-39, 41 and 44-45 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Hoier-Madsen in view of Brown and Da Costa.

Hoier-Madsen teaches a method of detection of antibodies to folate binding proteins from cow's milk from serum of patients with chronic inflammatory bowel disease. See Abstract of Hoier-Madsen. As correctly stated on page 6 of the Official Action, Hoier Madsen does not teach the detection of a folate receptor autoantibody, the use of a human cell or tissue, a cell membrane as a source for affinity matrix comprising apoFR or measurement of the uptake of labeled folate in the presence of the autoantibody. Further, Hoier-Madsen does not teach or suggest detection of the affinity for autoantibodies to folate receptors as recited in Claims 36, 44 and all claims depending therefrom of the present application. Further still, Hoier-Madsen does not teach or suggest determining affinity wherein a value of 10^{10} L/mole for an autoantibody's affinity for apoFR is a high affinity and a value of a value of 10^{6} L/mole for an autoantibody's affinity for apoFR is a low affinity as recited in Claim 25 and all claims depending therefrom of the present application.

Brown teaches an immunoassay in which antibodies are used in the detection of an antigen. See column 8 lines 18-20 of Brown. Brown further teaches detection of expression of a reporter gene for determining the presence of specific thyroid stimulating antibodies. See column 21 lines 19-58 and column 3 lines 36-60 of Brown. Brown does not teach measuring affinity of antibodies, or more specifically the affinity of autoantibodies. In contrast, Brown merely determines the presence and amount of an antibody, not its affinity for a receptor as recited in Claims 25, 36, 44 and all claims depending therefrom of the present application. Brown does not teach or suggest detection of the affinity for autoantibodies to folate receptors as

recited in Claims 36, 44 and all claims depending therefrom of the present application. Further still, Brown does not teach or suggest determining affinity wherein a value of 10^{10} L/mole for an autoantibody's affinity for apoFR is a high affinity and a value of a value of 10^{6} L/mole for an autoantibody's affinity for apoFR is a low affinity as recited in Claim 25 and all claims depending therefrom of the present application.

Da Costa teaches purification and the properties of two folate binding proteins that were co-purified from a rat placenta. See page 24 left column second paragraph of Da Costa. Da Costa further teaches that the specific activity for the binding of pteroylglutamic acid and the folate binding proteins could not be accurately determined because of the eluate concentration and high detergent concentration conditions. See page 26 left column second paragraph of Da Costa. Da Costa does not teach or suggest an autoantibody-apoFR complex or the affinity for any autoantibody to bind with an apoFR, and it would not have been obvious to one of ordinary skill in the art to use the conditions of Da Costa because the conditions taught by Da Costa were not sufficient to determine binding of the proteins to the acids. Further, Da Costa does not teach or suggest detection of the affinity for autoantibodies to folate receptors as recited in Claims 36, 44 and all claims depending therefrom of the present application. Further still, Da Costa does not teach or suggest determining affinity wherein a value of 10^{10} L/mole for an autoantibody's affinity for apoFR is a high affinity and a value of a value of 10^{6} L/mole for an autoantibody's affinity for apoFR is a low affinity as recited in Claim 25 and all claims depending therefrom of the present application.

The combination of Hoier-Madsen, Brown and Da Costa does not teach or remotely suggest the claimed invention. The combination does not teach or suggest detection of the affinity for autoantibodies to folate receptors as recited in Claims 36, 44 and all claims

depending therefrom of the present application. Further, the combination does not teach or suggest determining affinity wherein a value of 10^{10} L/mole for an autoantibody's affinity for apoFR is a high affinity and a value of a value of 10^{6} L/mole for an autoantibody's affinity for apoFR is a low affinity as recited in Claim 25 and all claims depending therefrom. Thus the combination of references does not teach or suggest these claim recitations. The rejection of Claims 25-39, 41 and 44-45 under 35 U.S.C. §103(a) is overcome. Withdrawal of the rejection and issuance of Claims 25-39, 41 and 44-45 is earnestly solicited.

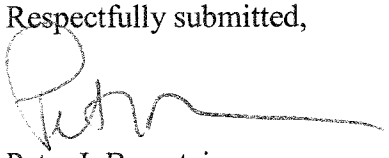
Claims 40, 42 and 43 stand rejected under 35 U.S.C. 103 (a) as allegedly unpatentable over Hoier-Madsen in view of Brown and Da Costa and in further view Yu.

The deficiencies of Hoier-Madsen, Brown and Da Costa are fully discussed above. Yu does not cure these deficiencies.

Yu teaches antibodies or fragments thereof conjugated to a diagnostic or therapeutic agent. See column 61 lines 36-39 of Yu. Yu further teaches that detection of the antibody can occur by coupling the antibody to detectable substances which include enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, radioactive materials, and certain metal ions. See column 61 lines 41-48 of Yu. Yu does not teach or suggest forming a complex between an autoantibody and an apoFR complex, as recited in Claim 36, from which Claims 40, 42 and 43 depend. The rejection of Claims 40, 42 and 43 under 35 U.S.C. §103(a) is therefore overcome. Withdrawal of the rejection and issuance of Claims 40, 42 and 43 is earnestly solicited.

It is respectfully submitted that the foregoing amendments and remarks effectively address each of the issues underlying the Examiner's rejections. It is therefore respectfully suggested that the claims are in condition for allowance, and that allowance is respectfully requested.

Respectfully submitted,



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